



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,971	08/11/2005	Douglas Burch	27211.04154	3185
24024 7590 01/25/2008 CALFEE HALTER & GRISWOLD, LLP 800 SUPERIOR AVENUE SUITE 1400 CLEVELAND, OH 44114			EXAMINER TANG, SON M	
			ART UNIT 2612	PAPER NUMBER
			MAIL DATE 01/25/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/530,971	Applicant(s) BURCH ET AL.	
	Examiner Son M. Tang	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \*c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/04/07</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1- 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. [US 5,995,903; Smith] in view of Ellenby et al. [US 6,064,398; Ellenby].

**Regarding claims 1-2 and 7:** Smith discloses a method and system for assisting pilot situational awareness, comprising: -a navigational unit (GPS 12) for determining an aircraft 3-Dimension position (location), an image generator (24) for generating one or more virtual images as a "real world" images surrounding the aircraft, which the aircraft is flying based, at least in part, on the aircraft location, and a display (26) that displays the one or more virtual images [see Figs. 1 and 5, col. 2, lines 45-67, col. 4, lines 22-67 and col. 5, lines 1-42]. Smith does not specifically mention of attitude information and a head up display. Ellenby teaches a navigation system comprising, an attitude determination means (15) and a head up display (13) [see Figs. 1-2, col. 4, lines 49-67]. It would have been obvious of one having ordinary skill in the art at the time of the claimed invention to have attitude information and a head up display as suggested by Ellenby in the system of Smith, so that the attitude data would produce an accurate position information in combination with a head up display which provides a convenience display to the user.

**Regarding claims 3-6:** Smith discloses a method and system for assisting pilot

situational awareness, comprising: -a navigational unit (GPS 12) for determining an aircraft 3-Dimension position (location), an image generator (24) for generating one or more virtual images as a "real world" images surrounding the aircraft, which the aircraft is flying based, at least in part, on the aircraft location, and a display (26) that displays the one or more virtual images [see Figs. 1 and 5, col. 2, lines 45-67, col. 4, lines 22-67 and col. 5, lines 1-42]. Smith does not specifically mention of attitude information and a head up display. Ellenby teaches a navigation system comprising, an attitude determination means (15) and a head up display (13) [see Figs. 1-2, col. 4, lines 49-67]. It would have been obvious of one having ordinary skill in the art at the time of the claimed invention to have attitude information and a head up display as suggested by Ellenby, into the system of Smith, in order to provide an accurate position information and a convenience display to an aircraft's operator. Smith does not specifically show that second virtual images associated with an out-side-window views. Smith discloses that the virtual image is the real world image surrounding the aircraft, which includes cockpit view or a trailing view (seen from behind the aircraft) [col. 8, lines 53-57], which is obvious of one having skill in the art that operator can be seen multiple views surrounding the aircraft, including over-the-nose and out-the-side-window views.

**Regarding claims 8-11:** Smith and Ellenby disclose all the limitations as described above, except for not specifically show that the display device is disposed in relation to a cockpit window or cockpit instrument panel. As long as, the display is being displayed the virtual images. It is obvious of one having ordinary skill in the art would disposed the display device at any appropriate location that would provide an optimal convenience to the operator in the cockpit, including at the window and instrument panel as Applicant claimed.

**Regarding claim 12:** Ellenby further teaches a camera view (19, 102) for selecting view of the real world from the aircraft [see Figs 1-2].

**Regarding claims 13-14:** Refer to the rejected claims 7 above.

**Regarding claim 15:** Smith and Ellenby disclose all the limitations as described above, but does not specifically mention about an inertial navigation system adapted to periodically provide attitude information. Ellenby further shows an attitude determination means (15) in conjunction with GPS, whereby, both attitude means (15) and GPS system are capable of determining the attitude information. Therefore, it is obvious of one having ordinary skill in the art to recognize that attitude determining means (15) can be used as an alternative component for an inertial navigation system.

**Regarding claim 16:** Smith and Ellenby disclose all the limitations as described above, except for not specifically show a second display for display a second perspective view of the virtual world which different from the first view. It is obvious of one having ordinary skill in the art to have an additional display device for displaying a second view image that different from the first view, so that operator can see more than one views surrounding the aircraft.

**Regarding claims 17-25:** The claimed method steps are interpreted and rejected as rejection of apparatus claims 7-16 stated above.

### ***Response to Arguments***

3. Applicant's arguments, filed 10/10/2007, with respect to the rejection(s) of claim(s) 1-3 under Hamilton have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Smith et al. and Ellenby et al.

*Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Margolin [US 6,023,278; US 5, 566,073], Monson [US5,751,576], Briffe et al. [US6,057,786], Nicosia et al. [US 5,654,890] and Sayder [US6,381,519].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son M. Tang whose telephone number is (571)272-2962. The examiner can normally be reached on 5/8.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Wu can be reached on (571)272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Son Tang

  
BENJAMIN C. LEE  
PRIMARY EXAMINER